

Alabama Southern Pine Beetle Prevention Program

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After completing SPB Prevention guideline thinning, this plantation now has a low SPB Hazard rating.

The Southern Pine Beetle (SPB) is the number one killer of pines in Alabama. Unmanaged and overcrowded stands of loblolly and shortleaf pines are susceptible to attack. Epidemic populations of this bark beetle have occurred in eight of the last ten years in Alabama. Expanding populations, if not controlled, may devastate entire forests causing millions of dollars in damage. Technical assistance and financial incentives are now available under the Southern Pine Beetle Prevention and Restoration Project to help forest landowners in Alabama implement prevention practices.

Prevention through good forest management is the best approach for protecting your pine forests from bark beetle attacks. A professional forester can advise you about recommended practices to maintain healthy forests and reduce the susceptibility to bark beetles. Your forester can also determine if you qualify for financial assistance under this program.

Certain pine forests are more likely to suffer from SPB infestations than others.

The SPB most commonly infests stands that consist of:

- Loblolly or shortleaf pine older than 10 years of age
- Unmanaged natural stands or plantations that are over-crowded and slow growing
- Over-mature stands with declining radial growth
- Dense pine stands that are rated as medium to very high, using the Alabama SPB Hazard Rating system.

This project provides information on how to recognize high-hazard conditions and describes those forestry practices that qualify for federal cost-share assistance. In the short term, these incentives are designed to offset some of the costs private landowners must make to install prevention measures. The long-term goal is to reduce the susceptibility of Alabama forests to future SPB outbreaks.

How to Reduce SPB Hazard

Thinning of overly dense, slow-growing pine stands will stimulate growth and

vigor in young stands and reduce the SPB hazard. Private forest landowners are encouraged to work with an Alabama Forestry Commission forester or a consulting forester to determine if pine stands on your property have an SPB hazard score of 100 or more (very high, high, or medium). They can also develop a TREASURE Forest plan for your property. Any plan with pine stands must incorporate SPB hazard rating and stand management practices to protect the forests from future SPB outbreaks. Landowners should follow their TREASURE Forest plan in order to reduce the SPB hazard on their pine stands. In the case of bark beetles, good forest management is good pest management.

Purpose: To lower the Southern Pine Beetle hazard by improving tree vigor, growth, and stand quality. This is done by removing diseased trees, less desirable trees with poor form, forked trees, slow-growing trees, and other trees that compete with the best trees in the stand for sunlight, water, and nutrients. Trees that have less competition for water and nutri-

ents are healthier and have a lower SPB hazard risk

Commercial Thinning: There is a variety of thinning for commercial timber stands. A combination of row thinning and selective thinning is strongly recommended. This method removes every third, fourth, or fifth row entirely, plus selectively removes trees from between the unthinned rows. Removing rows creates corridors that make equipment use easier and helps minimize damage to the residual crop trees. Undesirable trees between the unthinned rows are then harvested. Another less desirable method includes simple row thinning, i.e. removal of entire rows with no thinning between rows. This method is simple, but offers no opportunity to favor good trees over bad trees and does not effectively create free-to-grow conditions for the trees that remain. Another method is selective thinning, i.e. selecting each individual tree for harvest with no row thinning. This method allows full control to free up the best trees in the stand, but equipment operation can be difficult in dense stands, and damage to leave trees can be significant. *For Commercial Thinning, the SPB hazard rating should be reduced to a score of below 100 with a minimum of 65 square feet of basal area per acre left after the commercial thinning is completed*

Pre-Commercial Thinning: Pre-commercial thinning is used to release overcrowded stands, which contain trees that are still too small to have any commercial value in order to prevent stagnation and increase growth on the remaining trees. Thinning can sometimes be delayed until the trees are large enough to make fence posts or pulpwood, if a market is available. However, the growth loss from delayed thinning will probably be greater than the income received for low-value products. Pre-commercial thinning, plus cull tree removal of large hardwoods can result in a significant investment return in dense, young pine stands. This type thinning produces no immediate income for the landowner, but the cost can be justi-

fied by the value of increased residual timber growth.

Unwanted trees can be removed with herbicides, mechanical equipment, or by cutting. Thinning can be done by hand, using chainsaws, brush-hooks, axes or mechanical equipment, such as heavy-duty bush-hogs, or other mechanical thinning systems. Row thinning removes all trees in strips six to eight feet wide, with six to eight-foot wide uncut strips between. Strips can run in one direction, or cross in a checkerboard fashion. *For Pre-commercial Thinning, approximately 300 trees per acre should be left after the thinning is completed (+/- 25%) based on 1/10th-acre check plots.*



Loblolly pine plantation with a very high SPB Hazard rating.

Annosus Root Rot (ARR) Treatment: When thinning on ARR High Hazard soils, Borax must be applied on all freshly cut pine stumps within 24 hours of cutting. Cover the freshly cut stump with about 1/8-inch Borax powder. The best method of application is to sprinkle the material "salt-shaker" style on the freshly cut stump surfaces. "Shaker-Top" applicators are available in most farm or garden type stores in one or two pound sizes. At the proper rate of application, one pound of product will adequately cover 50 square feet of stump surfaces (or approximately 260 six-inch stumps, 158 eight-inch stumps, 80 ten-inch stumps, or 60 twelve-inch stumps). Remember that this site will always be classified as High Hazard for ARR and any future partial cuttings will need to be treated with Borax after any harvest.

Borax Specifications: Borax (Sodium Tetraborate Decahydrate) is sold under several Names: Borax, Sporax (Wilbur-Ellis), Twenty Mule Team Borax, etc. It usually comes in 50 to 25-pound bags as a powder.

Conducting The Sale And Harvest:

It is strongly recommended that you use a Registered Consulting Forester to handle your thinning harvest operation. A consulting forester can inventory and mark the stand, contact and solicit bids from potential buyers, develop written harvest contracts that protect your personal interests, and oversee the thinning operation for satisfactory performance. Consulting forester fees are handled in different ways

such as a percentage of the timber sale income, flat per-acre fees for marking, or other arrangements suitable to both parties. Studies have shown that using a consulting forester often results in higher revenues to the landowner, even after consultant fees are paid from the sale proceeds.

If you choose to handle the sale yourself, consider hiring a consultant to mark the stand, solicit as many bids from potential buyers as possible, and **always** use a written contract. In the contract, be sure to stipulate the thinning requirements that must be followed, specifically those that relate to the residual SPB

hazard rating, Annosus Root Rot recommendations basal area, and number of trees per acre that must remain following the thinning.

Environmental Considerations: All practices performed must follow Alabama's Best Management Practices for Forestry and have no adverse effect on threatened or endangered species or their habitat.

2003-2004 SPB Prevention Project: Of the 404 landowners that applied for SPB Prevention, 198 landowners were funded. These approved practices totaled \$550,000. All approved practices were Pre-commercial Thinning for a total of 12,665 acres.

Parting Words: Southern Pine beetles **can be prevented** by the use of sound Forest Management practices. ♣